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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,228	04/08/2004	Richard D. Dettinger	ROC920030347US1	9498

46797 7590 10/31/2006

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ART UNIT	PAPER NUMBER
2169	

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/821,228	DETTINGER ET AL.	
	Examiner	Art Unit	
	Jared M. Bibbee	2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/27/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-44 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

With regards to claims 1, 11, 17, 19, 29, and 35 it is clear that the claim language simply represents an abstract idea where the generated logical relationships are associated with the logical representation of the data, but fails to provide a useful, concrete, and tangible purpose or result. Applicant is reminded that patent protection is limited to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept *(Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96 (1966)); In re Fisher, 421 F.3d 1365, 76 USPQ2d 1225 (Fed. Cir. 2005); In re Ziegler, 992 F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)).*

Since the claims presented by the applicant are indeed simply abstract ideas, the claims are not covered by the statutory categories of patentable subject matter set forth in 35 U.S.C. 101. An abstract idea is categorized as one of the three judicially created exceptions to patentable subject matter (the three exceptions are Laws of Nature, Natural Phenomena, and Abstract Ideas). The courts have concluded that in order to patent on of the three judicial exceptions to the statutory categories of the invention the claimed subject matter must have a practical, real-world application that produces a useful, concrete, and tangible result *(State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02).*

In order to overcome this rejection, the applicant must add a final limitation to independent claims 1, 11, 17, 19, 29, and 35 showing step of actually presenting the associated relationships with the representation of the data to a user in the form of a view. This final step is could be presented using the display mentioned in Fig. 1, 142 of the drawings included with the applicant's specification. By adding this conclusionary step, the applicant will add to the claimed invention a useful, concrete, and tangible result that arises from a practical application of the method steps previously mentioned in the claim.

Claims 2-10, 12-16, 20-28, and 30-34 are rejected because they contain the deficiencies of claims 1, 11, 19, and 29 respectively.

Additionally with respect to claims 19, 29, 35, and 36, the claims are rejected under 35 U.S.C. 101 because it also appears that the computer readable medium that is claimed by the applicant is not limited to physical articles or objects, which are structurally and functionally interrelated to the instructions in such a manner that would enable the instructions to act as a computer component and realize any functionality. On page 10, paragraph [0032], the applicant states that the computer-readable medium for which the program of the invention can be embodied is a 'signal-bearing media'. The applicant further states that a computer-readable 'signal-bearing media' includes "communication mediums, such as, wireless communications". This type of communication medium or transmission medium is not limited to media, which meet the criteria set forth above.

Appropriate clarification and/or correction is required. It is noted that in this instance, Applicant's specification clearly distinguishes between media, which "store" versus communications media, which would "convey" the program. Therefore, an amendment to the

claims to recite a 'physical computer readable storage medium' rather than 'computer readable medium' would be favorably considered.

Claims 20-28, 30-34, and 37-43 are rejected because they contain the deficiencies of claims 19, 29, and 36 respectively.

With regards to claims 18, 36, and 44 it is clear that the claim language simply represents an abstract idea where the abstract query is being transformed into an executable query capable of being executed against the physical data, but fails to provide a useful, concrete, and tangible purpose or result. Applicant is reminded that patent protection is limited to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept *(Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96 (1966)); In re Fisher, 421 F.3d 1365, 76 USPQ2d 1225 (Fed. Cir. 2005); In re Ziegler, 992 F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993))*.

Since the claims presented by the applicant are indeed simply abstract ideas, the claims are not covered by the statutory categories of patentable subject matter set forth in 35 U.S.C. 101. An abstract idea is categorized as one of the three judicially created exceptions to patentable subject matter (the three exceptions are Laws of Nature, Natural Phenomena, and Abstract Ideas). The courts have concluded that in order to patent on of the three judicial exceptions to the statutory categories of the invention the claimed subject matter must have a practical, real-world application that produces a useful, concrete, and tangible result *(State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02)*.

In order to overcome this rejection, the applicant must add a final limitation to independent claims 18, 36, and 44 showing step of actually presenting the associated

relationships with the representation of the data to a user in the form of a view. This final step is could be presented using the display mentioned in Fig. 1, 142 of the drawings included with the applicant's specification. By adding this conclusionary step, the applicant will add to the claimed invention a useful, concrete, and tangible result that arises from a practical application of the method steps previously mentioned in the claim.

Claims 37-43 are rejected because they contain the deficiencies of claim 36.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 6, 11, 19, and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 11, 19, and 29 recite the limitation "the relationships" on page 38, line 8, page 39, line 25, page 42, line 3, and page 43, line 25, respectively. There is insufficient antecedent basis for this limitation in the claims. It is unclear as to which relationship is being referenced and therefore examiner requests applicant to clarify which relationship is being referenced.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5-7, 9-12, 14-16, 18-21, 23-25, 27-30, 32-34, 36-38, 40-42, and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Depledge et al (U.S. 5,899,988).

As to independent claim 1, Depledge clearly teaches a computer-implemented method of logically representing relationships between data elements *(Rows of data, Fig. 1)* defined according to a first physical representation of data *(100, Fig. 1) (see column 2, lines 24-36; Note that within the Table 100 there are two relationships being defined. First, Customer # is being related to Location. Second, Customer # is being related to Type.)*, comprising: providing a logical representation of the data *("1" or "0" in 206, Fig. 2A)*, the logical representation *("1" or "0" in 206, Fig. 2A)* abstractly describing a second physical representation of the data *(200, Fig. 2A)*, wherein the second physical representation of the data *(200)* is generated from the first physical representation of the data *(100) (see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.)*.

Depledge further teaches on the basis of the relationships between the data elements *(Rows of data, Fig. 1)* defined according to the first physical representation of the data *(100)*, determining corresponding relationships between corresponding data structures defined according to the second physical representation of the data *(200) (see Figs. 1 and 2A; Note that a logical relationship is determined based on the data elements located in the first physical relationship (100). The data structures in figures 1 and 2A are tables consisting of rows and columns. The data structure in Figure 2A is defined by the use of bits "1" and "0", which represent the relationship between, in this case, a customer # and a location.)*.

Depledge further teaches generating logical relationships abstractly describing the determined corresponding relationships, each logical relationship defining a path between data structures of the second physical representation *(200) (see Figs. 1 and 2A; Note that a logical relationship is determined based on the data elements located in the first physical relationship (100). The data structures in figures 1 and 2A are tables consisting of rows and columns. The data structure in Figure 2A is defined by the use of bits "1" and "0", which represent the relationship between, in this case, a customer # and a location.).*

Depledge also teaches associating the generated logical relationships *(202 and 204, Fig. 2A)* with the logical representation of the data *(200, Fig. 2A) (see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.).*

As to dependent claim 2, Depledge teaches the limitation where the logical representation comprises a plurality of logical field specifications *(see Fig. 2A; Note that Fig. 2A is a table consisting of columns and rows. The first column corresponds to all of the locations which are represented in the first physical representation (100). The second column is a logical bit representation of the relationship of customer# vs. location.)*, and wherein associating comprises including the generated logical relationships with respective logical field specifications *(see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.).*

As to dependent claim 3, Depledge teaches the limitation where the first physical representation of the data is a document in text-based markup language *(see Fig. 1; Note that the table is serving as the document and within the document there are fields which contain text.).*

As to dependent claim 5, Depledge teaches the limitation where the second physical representation is a relational representation *(see Fig. 2A; Note that for each location represented in the first physical representation (100) there is a set of corresponding bits (202 and 204, Fig. 2A) which represent the column "Location" within the first physical representation (100)).*

As to dependent claim 6, Depledge teaches the limitation where each data structure is a table of the relational representation *(see Fig. 1 and 2A and column 2, lines 24-49).*

As to dependent claim 7, Depledge teaches the limitation where the first physical representation is a hierarchical representation *(see Fig. 1 and column 2, lines 24-36)* and the second physical representation is a relational representation *(see Fig. 2A and column 2, lines 37-49).*

As to dependent claim 9, Depledge teaches the limitation where each data structure is a table of the relational representation *(see Fig. 1 and 2A and column 2, lines 24-49).*

As to dependent claim 10, Depledge teaches the limitation of removing any redundant determined corresponding relationships before generating the logical relationships *(see column 8, lines 23-36).*

As to independent claim 11, Depledge clearly teaches a computer-implemented method of logically representing relationships between data elements *(Rows of data, Fig. 1)* defined according to a first physical representation of data *(100, Fig. 1) (see column 2, lines 24-36; Note that within the Table 100 there are two relationships being defined. First, Customer # is being related to Location. Second, Customer # is being related to Type.)*, comprising: generating a second physical representation of the data *(200, Fig. 2A)* from the first physical representation *(100) (see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.).*

Depledge further teaches generating a logical representation of the data *("1" or "0" in 206, Fig. 2A)* as represented according to the second physical representation *(200)*, the logical representation abstractly describing the second physical representation of the data *(200) (see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.)*.

Depledge further teaches that on the basis of the relationships between the data elements defined according to the first physical representation of the data, determining corresponding relationships between corresponding data structures defined according to the second physical representation of the data *(200) (see Figs. 1 and 2A; Note that a logical relationship is determined based on the data elements located in the first physical relationship (100). The data structures in figures 1 and 2A are tables consisting of rows and columns. The data structure in Figure 2A is defined by the use of bits "1" and "0", which represent the relationship between, in this case, a customer # and a location.)*.

Depledge further teaches generating logical relationships *(202 and 204, Fig. 2A)* abstractly describing the determined corresponding relationships *(200, Fig. 2A) (see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.)*.

Depledge further teaches including the generated logical relationships with the logical representation *(200, Fig. 2A) (see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.)*; wherein each of the generated logical

relationships describes a path for traversing the second physical representation from a first data structure to a second data structure when processing a query requesting information related to the first and second data structures *(see column 8, lines 47-67 through column 9, lines 1-28).*

As to dependent claim 12, claim 12 is the same as claim 3 and is rejected for the same reasons as set forth in claim 3 above.

As to dependent claim 14, claim 14 is the same as claim 5 and is rejected for the same reasons as set forth in claim 5 above.

As to dependent claim 15, claim 15 is the same as claim 6 and is rejected for the same reasons as set forth in claim 6 above.

As to dependent claim 16, claim 16 is the same as claim 10 and is rejected for the same reasons as set forth in claim 10 above.

As to independent claim 18, Depledge clearly teaches a computer-implemented method of querying physical data logically represented by a data abstraction model, wherein the physical data being queried is contained in data structures generated from a data source having a different schema from the data structures containing the physical data being queried *(see Fig. 3; Note the use of a query table (300) to represent the query containing physical data (Type = 'Business') and logical data (Bits '1' and '0').)*, comprising: receiving an abstract query comprising logical fields and corresponding values, wherein each of the logical fields is defined in the data abstraction model and wherein one or more of the logical fields are result fields to be returned by execution of the abstract query *(see Fig. 3 and column 3, lines 4-14; Note that a result bits are calculated using high efficient logic.).*

Depledge further teaches transforming the abstract query into an executable query capable of being executed against the physical data *(see Fig. 1 and 2A and column 3, lines 22-44; Note*

that once the location was changed, the values were then changed in the physical data using an executable query which flipped the bits representing the new changed values.); wherein the transforming is done using the data abstraction model and wherein the data abstraction model defines a specific path for traversing the data structures containing the physical data to reach the one or more result fields *(see Fig. 3 and column 3, lines 22-44; Note that a bitmap index such as the one showed in Fig 3 (302) is used to map each bit for a given location to the physical data (shown in Fig. 1). The result index (320) represents the bitmap of the physical data as a result of the query terms portrayed in Fig. 3 (i.e TYPE = 'BUSINESS' and LOCATION = 'EAST' or LOCATION = 'SOUTH').).*

As to claims 19-21, 23-25, and 27-28, claims 19-21, 23-25, and 27-28 are computer-readable medium claims corresponding to method claims 1-3, 5-7, and 9-10, respectively and are rejected for the same reasons as set forth in claims 1-3, 5-7, and 9-10 above. Depledge clearly teaches a computer-readable medium *(407, Fig. 4) (see column 5, lines 23-25).*

As to claims 29-30 and 32-34, claims 29-30 and 32-34 are computer-readable medium claims corresponding to method claims 11-12 and 14-16, respectively and are rejected for the same reasons as set forth in claims 11-12 and 14-16 above.

As to claim 36, claim 36 is a computer-readable medium claim corresponding to method claim 18 and is rejected for the same reasons as set forth in claim 18 above.

As to dependent claim 37, Depledge clearly teaches the limitation where the specific path is derived from relationships in the data source *(see Fig. 3 and column 3, lines 22-44; Note that a bitmap index such as the one showed in Fig 3 (302) is used to map each bit for a given location to the physical data (shown in Fig. 1). The result index (320) represents the bitmap of the physical data as a result of the query terms portrayed in Fig. 3 (i.e TYPE = 'BUSINESS' and LOCATION = 'EAST' or LOCATION = 'SOUTH').).*

As to claim 38, claim 38 is a computer-readable medium claim corresponding to method claim 3 and is rejected for the same reasons as set forth in claim 3 above.

As to dependent claim 40, Depledge clearly teaches the limitation where the data structures containing the physical data being queried are arranged according to a relational schema *(see Fig. 2A; Note that for each location represented in the first physical representation (100) there is a set of corresponding bits (202 and 204, Fig. 2A) which represent the column "Location" within the first physical representation (100)).*

As to dependent claim 41, Depledge clearly teaches the limitation where each data structure containing physical data being queried is a database table according to the relational schema *(see Fig. 1 and 2A and column 2, lines 24-49).*

As to dependent claim 42, Depledge clearly teaches the limitation where the data source is arranged according to a hierarchical representation *(see Fig. 1 and column 2, lines 24-36)* and the data structures containing the physical data being queried define a relational representation *(see Fig. 2A and column 2, lines 37-49).*

As to independent claim 44, Depledge clearly teaches a data structure residing in memory *(see column 2, lines 24-36 and column 5, lines 8-25)*, comprising: a plurality of logical field specifications *(see Fig. 2A; Note that Fig. 2A is a table consisting of columns and rows. The first column corresponds to all of the locations which are represented in the first physical representation (100). The second column is a logical bit representation of the relationship of customer# vs. location.)*, each abstractly describing at least one of a plurality of data structures defined according to a physical representation of data *(100) (see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical*

representation (100) have a location of North.), wherein at least one of the plurality of logical field specifications includes one or more logical relationships algorithmically generated from relationship information describing relationships between the data represented according to another physical representation of the data *(see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.)*, each logical relationship describing a path for traversing the physical representation of the data from a first data structure to a second data structure when processing a query requesting information related to the first and second data structures *(200) (see Figs. 1 and 2A; Note that a logical relationship is determined based on the data elements located in the first physical relationship (100). The data structures in figures 1 and 2A are tables consisting of rows and columns. The data structure in Figure 2A is defined by the use of bits "1" and "0", which represent the relationship between, in this case, a customer # and a location.).*

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 4, 8, 13, 17, 22, 26, 31, 35, 39, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Depledge in view of Murthy et al (U.S. 2004/0220927 A1).

As to dependent claim 4, note the discussion of claim 3 above, Depledge discloses all of the limitations of claim 3 but fails to explicitly teach the text-based markup language is one of the eXtended Markup Language (XML) and the MicroArray Gene Expression Markup Language

(MAGE-ML). However, Murthy clearly teaches the text-based markup language is one of the eXtended Markup Language (XML) and the MicroArray Gene Expression Markup Language (MAGE-ML) *(see para [0031])*. It would have been obvious to one of ordinary skill in the art at the time of the invention, having the teachings of Depledge and Murthy before him/her to substitute the document in text-based markup language *(data table (100, Fig. 1))* as taught by Depledge with the XML document as taught by Murthy. The skilled artisan would have been motivated to substitute the document in text-based markup language *(data table (100, Fig. 1))* as taught by Depledge with the XML document as taught by Murthy for the purpose of incorporating World Wide Web/HTML driven databases *(see para [0003])*.

As to dependent claim 8, note the discussion of claim 7 above, Depledge discloses all of the limitations of claim 7 but fails to explicitly teach the hierarchical representation is the eXtended Markup Language (XML). However, Murthy clearly teaches the hierarchical representation is the eXtended Markup Language (XML) *(see para [0031])*. It would have been obvious to one of ordinary skill in the art at the time of the invention, having the teachings of Depledge and Murthy before him/her to substitute the hierarchical data table *(100, Fig. 1)* as taught by Depledge with the XML document as taught by Murthy. The skilled artisan would have been motivated to substitute the hierarchical data table *(100, Fig. 1)* as taught by Depledge with the XML document as taught by Murthy for the purpose of incorporating World Wide Web/HTML driven databases *(see para [0003])*.

As to dependent claim 13, claim 13 is the same as claim 4 and is rejected for the same reasons as set forth in claim 4 above.

As to independent claim 17, Depledge clearly teaches a computer-implemented method of logically representing relationships between data elements described in a text-based document *(see Depledge column 2, lines 24-36; Note that within the Table 100 there are two relationships being defined. First, Customer # is being related to Location. Second, Customer # is being related to Type.)*, comprising: retrieving a relational database schema for a plurality of data structures, each data structure corresponding to one of the data elements *(see Figs. 1 and 2A; Note that data table 200 conatains data elements (i.e. 206) that consist of bitindex maps of the data table 100. These bitindex maps allow the system to recognize the relationships between data table customer # and location.)*; retrieving a logical representation abstractly describing the relational database schema *(see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.)*.

Depledge further teaches determining the relationships between the data elements from the text-based document *(see Figs. 1 and 2A; Note that data table 200 conatains data elements (i.e. 206) that consist of bitindex maps of the data table 100. These bitindex maps allow the system to recognize the relationships between data table customer # and location.)*; on the basis of the determined relationships, determining corresponding relationships between corresponding data structures defined according to the relational database schema *(see Figs. 1 and 2A; Note that a logical relationship is determined based on the data elements located in the first physical relationship (100). The data structures in figures 1 and 2A are tables consisting of rows and columns. The data structure in Figure 2A is defined by the use of bits "1" and "0", which represent the relationship between, in this case, a customer # and a location.)*.

Depledge further teaches generating logical relationships abstractly describing the determined corresponding relationships; and including the generated logical relationships with

the logical representation *(see column 2, lines 50-57; Note that the entry 206 in Fig. 2A indicates which bits have a location of North. In this example bit 2 (202) and bit 6 (204) have a "1" indicating that customer 102 and 106 in the physical representation (100) have a location of North.)*; wherein each of the generated logical relationships describes a path for traversing a relational database constructed according to the relational database schema from a first data structure to a second data structure when processing a query requesting information related to the first and second data structures *(see Fig. 3 and column 3, lines 22-44; Note that a bitmap index such as the one showed in Fig 3 (302) is used to map each bit for a given location to the physical data (shown in Fig. 1). The result index (320) represents the bitmap of the physical data as a result of the query terms portrayed in Fig. 3 (i.e TYPE = 'BUSINESS' and LOCATION = 'EAST' or LOCATION = 'SOUTH').)*.

Depledge does not explicitly disclose the use of a XML document instead of the text-based document. However, Murthy clearly teaches retaining hierarchical information from XML documents rather than text-based documents. It would have been obvious to one of ordinary skill in the art at the time of the invention, having the teachings of Depledge and Murthy before him/her to substitute the document in text-based markup language *(data table (100, Fig. 1))* as taught by Depledge with the XML document as taught by Murthy. The skilled artisan would have been motivated to substitute the document in text-based markup language *(data table (100, Fig. 1))* as taught by Depledge with the XML document as taught by Murthy for the purpose of incorporating World Wide Web/HTML driven databases *(see para [0003])*.

As to dependent claim 22, claim 22 is a computer-readable medium claim corresponding to method claim 4 and is rejected for the same reasons as set forth in claim 4 above.

As to dependent claim 26, claim 26 is a computer-readable medium claim corresponding to method claim 8 and is rejected for the same reasons as set forth in claim 8 above.

As to dependent claim 31, claim 31 is a computer-readable medium claim corresponding to method claim 4 and is rejected for the same reasons as set forth in claim 4 above.

As to independent claim 35, claim 35 is a computer-readable medium claim corresponding to method claim 17 and is rejected for the same reasons as set forth in claim 17 above.

As to dependent claim 39, claim 39 is a computer-readable medium claim corresponding to method claim 4 and is rejected for the same reasons as set forth in claim 4 above.

As to dependent claim 43, claim 43 is a computer-readable medium claim corresponding to method claim 8 and is rejected for the same reasons as set forth in claim 8 above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Murthy et al (U.S. 2003/0140308 A1) is cited to teach a mechanism for mapping XML schemas to object-relational database systems.

2. Agarwal et al (U.S. 2003/0065659 A1) is cited to teach providing a consistent hierarchical abstraction of relational data.

3. Doan et al (U.S. 2005/0060647 A1) is cited to teach a method for presenting hierarchical data.

4. Zhou et al (U.S. 2005/0097455 A1) is cited to teach a method and apparatus for schema-driven XML parsing optimization.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared M. Bibbee whose telephone number is 571-270-1054. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on 571-272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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